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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,164	07/30/2001	Craig E. Boutilier	3819-011108	2126

7590 11/05/2004

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EXAMINER

AKERS, GEOFFREY R

ART UNIT	PAPER NUMBER
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3625

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,164

Applicant(s)


BOUTILIER ET AL.

Examiner

Geoffrey Akers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 have been examined.

Claim Rejections - 35 USC § 103

2. Claims 1-20 are rejected under 35 USC 103(a) as unpatentable over McAfee(US Pat. No: 6,718,312) in view of Sandholm(US Pat. No: 6,272,473).

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3. As per claims 1-20 McAfee teaches a method of selecting one or more winning bids in a combinatorial auction(Abstract) where the method comprises receiving a plurality of bids of each comprising one or more items and an associated value for one or more items(col 9 line 65-col 10 line 15)and designing a subset of the bids as a current allocation containing two or more bids(col 10 lines 26-34).McAfee further teaches a computer system for forming combinatorial auctions with bid composition restrictions(col 11 lines 10-11). McAfee further teaches that for a seller's auction the selected set of recorded bids will maximized a value index(col 12 lines 13-17) or minimize a cost index(col 12 lines 16-19) for buyers. McAfee further teaches bidders' subset and superset restrictions(col 12 lines 36-37). McAfee teaches that during an auction a bidder may choose between alternatives(col 12 lines 42-43). McAfee further teaches bidding rounds(Fig 2/1000) and updating auction state variables(Fig 2/3000).McAfee also teaches reporting auction state variables(Fig 3/1100) and submission of bids(Fig 3/1220) and processing of bids(Fig 3/1320). McAfee also teaches computation of minimum acceptable bid(Fig 4/1312)(Fig 5/1322) and determination if the bid is included in the winning set(Fig 6/1331).McAfee furthermore considers subclasses whereby if the bid violates an additive activity rule(Fig 7/1410) or a non-additive activity restriction(Fig

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7/1420) or a superset restriction(Fig 7/1430) or a subset restriction(Fig 7/1440).In addition to that taught by McAfee, Sandholm further teaches determining a plurality of neighboring allocations comprising the combination of the current allocation and a new bid selected from the bids not part of the current allocation or any other neighboring allocation(col 4 line 36-49) and replacing the current allocation with one of the neighboring allocations where the one neighboring allocations is selected from the plurality of neighboring allocations stochastically(col 5 lines 23-53)(Fig 3A)(Fig 7)(Fig 8) or based on a heuristic value determined for the one neighboring allocation and updating a best allocation with the current allocation if a sum of the values of the bids of the current allocation is greater than or equal to a sum of the values of the bids of the best allocations(col 2 lines 20-36) and repeating these steps M times wherein the neighboring allocation is selected stochastically a first part of M times and is selected based in the heuristic value a second part of M times(col 5 line 56-col 11 line 46).As part of the analysis, Sandholm also teaches bid tree data structure generation(Fig 2/240) superset prune preprocessing(Fig 2/260).Sandholm also teaches optimal allocation(Fig 2/280) and best allocation price determination(Fig 5/525) and utilization of recursion relationships(Fig 5/550) subsequent to the bid entry(Fig 5/535).Sandholm teaches that winner determination in combinatorial auctions means choosing which bids to accept so as to maximize the sum of the accepted bids(col 2 lines 20-25) subject to the constraint that each item can be sold once. To effect combination variable reduction, Sandholm teaches bid tree data structures generation(col 5 lines 30-54) where bids(items and price combinations) are represented as leaves on the tree(col 6 lines 18-

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20). Sandholm also teaches a heuristic function of where a maximum contribution is recomputed during the search method in the bidtree structure(col 12 lines 51-64) for the combinatorial auction. Sandholm this teaches a method for optimally selecting asset of items by receiving a plurality of items having associated valuations and storing a plurality offsets of items in a data structure based on rules of inclusion/exclusion and creating candidate allocations of such sets where the candidate allocations are created by repeatedly search(M times) and selecting a candidate allocation comprising disjoint sets having an optimal combination of associated valuations(col 3 lines 9-21). It would have been obvious to one skilled in the art at the time of the invention to combine McAfee in view of Sandholm to teach the disclosure. The motivation to combine is to teach a method for winner determination combinatorial auctions in anytime auctions as enunciated by Sandholm(col 2 line 64-col 3 line 3).

Conclusion

4. THIS ACTION IS MADE NON-FINAL.

5. Any questions concerning this communication should be addressed to the primary examiner of record, Dr. Geoffrey Akers, P.E., who can be reached between 6:30 AM and 5:00 PM Monday through Friday at 703-306-5844. If attempts to contact the primary examiner are unsuccessful, the primary examiner's superior, Mrs. Wynn Coggins, SPE, may be telephoned at (703)-308-1344.

The fax number for Formal or Official faxes and Draft or Informal faxes to Technology Center 3600 or this Art Unit is (703)-308-3687. Any inquiry of a general

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nature or relating to the status of this application should be directed to the Group
receptionist whose telephone number is (703)-308-1113.

November 1, 2004

A handwritten signature in black ink, appearing to be 'G. Akers', written in a cursive style.

DR. GEOFFREY R. AKERS, P.E.
PRIMARY EXAMINER